IN THE SPECIFICATION:

Please amend the specification as follows:

Please substitute the paragraph beginning at page 1, line 5, and ending on page 2, line 1, with the following.

-- This invention relates to an exposure apparatus for use in the manufacture of semiconductor devices and, more particularly, to a projection exposure apparatus and method for transferring, by projection, a photomask pattern onto a wafer. Also, the invention relates to a semiconductor device manufacturing method. More specifically, the present invention is concerned with a scan type exposure apparatus and method, or to a semiconductor device manufacturing method using the same, wherein, for projection exposure of a wafer to a photomask pattern, the mask and ~~a~~ the wafer are scanningly moved in synchronism relative to a projection optical system (projection exposure system). As an example, the invention is suitably applicable to a scan type projection exposure apparatus which is usable in a lithographic process, among device manufacturing processes for the manufacture of semiconductor devices such as ICs or LSIs, image pickup devices such as CCDs, display devices such as liquid crystal panels, or magnetic heads, for example, to perform wafer alignment when a pattern of a reticle (first object) is to be produced by a projection optical system onto the surface of a wafer (second object). --

Please substitute the paragraph beginning at page 3, line 9, with the following.

-- Many proposals have been made on such a scan type projection exposure apparatus, and there is an example in which a unit-magnification scan type exposure apparatus with a

conventional reflection projection optical system is modified and refraction elements are incorporated into the projection optical system, such that reflection elements and refraction elements are used in combination. Another example is a scan type projection exposure apparatus wherein a reduction projection optical system comprising refraction elements only is used and wherein both ~~of~~ a mask stage and a stage (wafer stage) for a photosensitive substrate are scanningly moved in synchronism with each other at a speed ratio corresponding to the reduction magnification. --

Please substitute the paragraph beginning at page 3, line 24, and ending on page 4, line 18, with the following.

-- Figure 23 is a schematic view of a main portion of a scanning exposure apparatus. In the drawing, a mask (reticle) 1 on which an original is formed is supported by a mask stage 3. ~~Wafer~~ A wafer (photosensitive substrate) 13 is supported by a wafer stage 5. The mask 1 and the wafer 13 are disposed in an optically conjugate relationship with each other, with respect to a projection optical system, 2. Slit-like exposure light 12, coming from an illumination system (not shown) and being elongated in the Y direction in the drawing, illuminates the mask 1 by which it is imaged upon the wafer 13 with a size corresponding to the projection magnification of the projection optical system 2. A scan exposure process is performed by moving both of the mask stage 3 and the wafer stage 5 relative to the slit-like exposure light 12, in other words, relative to the projection optical system 2, at a speed ratio corresponding to the optical

magnification, to scan the mask 1 and the wafer 13. By this, the whole device pattern of the mask 1 is transferred onto a transfer region 10 on the wafer 13. --

Please substitute the paragraph beginning at page 6, line 16, with the following.

-- In order to avoid the effect of vibration of the projection optical system 2, attributable to driving the mask stage 3, it may be necessary that, from a start of acceleration, the mask stage 3 is moved to a position where the effect of vibration can be disregarded, and that the exposure process is initiated from that position. If driving the mask stage 3 causes a large vibration of the projection optical system, a substantial time has to be set from a start of scan motion to a start of exposure. Thus, throughput will be lowered. --

Please substitute the paragraph beginning at page 6, line 27, and ending on page 7, line 8, with the following.

-- Also, the scan distance of the mask stage 3 to the above-described position becomes longer. Since, in a scan type exposure apparatus, the scan direction of a mask stage is usually reversed between an odd-number shot and an even-number shot, on a wafer, for enhancement of throughput, the prolongation of the scan distance appears both on the opposite sides of the scan direction. This leads to bulkiness of the whole exposure apparatus. --

Please substitute the paragraph beginning at page 10, line 11, with the following.

-- In one preferred form of this aspect of the present invention, before image plane position measurement during scanning motion of said first movable stage, said detecting means detects image plane position information of the first object defined by said projection optical system as said first movable stage is held fixed, on the basis of which image plane position information, said detecting means calculates information related to image plane positions with respect to different scan positions of said first movable stage. --

Please substitute the paragraph beginning at page 17, line 3, with the following.

-- Light 22 passing a point in an exposure region then passes a pupil 23a of the projection optical system 2a and impinges on a position 22a. For the projection optical system 2b, which is at the maximum amplitude position, light 22 goes through a pupil 23b and impinges on a position 22b. From this, it is seen that the imaging position shifts as a result of a change in position of the projection optical system 2 due to vibration. More specifically, if the imaging magnification of the projection optical system 2 is β and the magnitude of maximum amplitude is a, there is produced a shift of imaging position by βa. --

Please substitute the paragraph beginning at page 20, line 6, with the following.

-- A mask alignment position detection system (observation microscopes 4 and 8) observes alignment marks 14 and 19 formed on the mask 1 and the mask stage ~~4~~ 3, respectively, and operates for alignment of the mask 1 with respect to the mask stage 3. A position detecting system (off-axis observation microscope 11) provided above the wafer 13 observes an alignment

mark (not shown) formed on the wafer 13, and operates to perform measurement of alignment errors of chips and to perform position alignment of the wafer 13. --

Please substitute the paragraph beginning at page 24, line 25, and ending on page 25, line 6, with the following.

-- Since the mark CMc is already formed on the reticle, the measured value may be taken as offset. If, however, mark CMc cannot be formed at the center of the reticle as in this case, marks ~~CMl~~ CMi and CMr may preferably be located in peripheral portions of the reticle. That is, offset calculation may be made from an average of the shift magnitude measured in relation to the mark ~~CMl~~ CMi and the shift magnitude measure in relation to the mark CMr. --

Please substitute the paragraph beginning at page 29, line 16, with the following.

-- When acceleration A of the mask stage 3 is changed, scan speed control using a corresponding offset, which is based on the data table stored in the storage means 18, as well as exposure amount control may be made to execute the scan exposure. --

Please substitute the paragraph beginning at page 29, line 21, and ending on page 30, line 9, with the following.

-- In the foregoing example, a description has been made with reference to the effect of image shift produced by vibration of the projection optical system 2. However, when the projection optical system 2 vibrates, additionally, there will occur a focus error or a tilt

component error with respect to the wafer surface. ~~Similar~~ A similar correction may be made to these error components. More specifically, an offset to be produced in relation to acceleration A and scan direction, may be measured beforehand and then, while executing the scan exposure, the wafer stage 5 may be correction-driven in the focus direction of the projection optical system. This assures high precision scan exposure and prevents enlargement in the size of the apparatus, and enables enhancement of throughput. --

Please substitute the paragraph beginning at page 35, line 6, with the following.

-- Figure 15A illustrates variation, with respect to defocus amount DE of the projection optical system 2, of a detected signal IS, on the axis of the ordinate, which is based on the light quantity as detected by the detecting means, wherein the defocus amount DE is taken on the axis of the abscissa. Hereinafter, this will be referred to as "profile data". --

Please substitute the paragraph beginning at page 36, line 87, with the following.

-- In this embodiment, as described above, the intensity of detected signal IS with respect to defocus amount DE as measured is stored into storage means in the form of a table, and the detected light quantity is monitored while scanningly moving the mask stage 3, whereby any change in image plane (focus shift) with the scan of the mask stage 3 is monitored. As one factor for causing image plane variation, there is pitching: during the scan, the mask stage 3 shifts

vertically (along the optical axis direction) with the scan position. Also, while taking into account the throughput of actual exposure, it is necessary to scan the mask stage 3 at a high speed. --

Please substitute the paragraph beginning at page 37, line 4, with the following.

-- As for the slit pattern 33 on the reticle 1, as shown in Figure 11A, there are two types of marks: a slit (hereinafter "H mark"), which is parallel to the scan direction (X direction) and a slit (hereinafter "V mark"), which is in a direction perpendicular to the scan direction. Further, these slits are formed in two groups 33a and 33b being separated in the direction perpendicular to the scan direction. This enables observation of focus change at two locations on the reticle, and thus enables observation of focus change in a direction perpendicular to the scan direction. --

Please substitute the paragraph beginning at page 39, line 2, with the following.

-- At step 203, changes in the detected signal with the position of the mask stage 3 are measured. Figures 17A - 17D, 18A, 18B, 19A and 19B show this. Here, with reference to Figures 18A - 19B, focus variation will be explained. --

Please substitute the paragraph beginning at page 42, line 11, with the following.

-- In the foregoing, although the description has been made ~~to~~ of an example wherein measurement is performed with a drive of an amount Zd or a defocus amount Zd(max) to a particular reflection surface ~~31.~~ 31, the invention is not limited to this. That is, by moving the

reflection surface 31 in the focus direction and by executing the measurement twice or more, a focus change (including direction) in the course of scan exposure can be detected. --

Please substitute the paragraph beginning at page 43, line 8, with the following.

-- While, in the foregoing description, the scan is made in one direction, taking into account the throughput in an actual exposure operation, it is possible that the scan exposure is made reciprocally in opposite directions. On that occasion, a focus shift Z(x) may be measured in each of the two directions and, while controlling them as an offset, an actual exposure process may be performed. For measurement on that occasion, a first measurement may be made in two directions and, then, a second measurement may be made in two directions. This enables a reduction in time for measurement. --

Please substitute the paragraph beginning at page 46, line 17, and ending on page 47, line 1, with the following.

-- While some examples have been described with reference to slit 41 (Figure 11B) on a reticle pattern, similar measurement may be made by using slit 42, which is provided on the opposite side of the reticle 41. By monitoring focus change at both sides of a reticle, it is possible to detect focus change (tilt component) in a direction perpendicular to the scan direction. Measured values may be controlled as offset and, during an actual exposure process, the exposure may be performed while moving the wafer stage 5 in the focus direction. High precision scan exposure is attainable. --

Please substitute the paragraph beginning at page 47, line 4, with the following.

-- In the second and third embodiments, slit means provided on a reticle is used and it is illuminated. The focus shift is detected on the basis of the quantity of light coming back from a reflection surface of a wafer stage. In the present embodiment, as compared therewith, a detection mark (second slit mark) is formed on a wafer stage and, through observation of such a mark, similar advantageous effects are provided. --

Please substitute the paragraph beginning at page 50, line 22, and ending on page 51, line 7, with the following.

-- Although the detection mark described comprises both ~~of~~ an H mark and a V mark, it is not always necessary to use both of them. If both of these marks are used, an intermediate value between the best focus plane of the H mark and the best focus plane of the V mark may preferably be taken as a best focus plane of the reticle image. As compared therewith, if the detection system or the projection optical system comprises an optical system with respect to which production of astigmatism can be disregarded, measurement may be made by using only one of the H mark and V mark, and a measured value obtained may be taken as a focus correction value. --